TM 3-4230-214-12&P

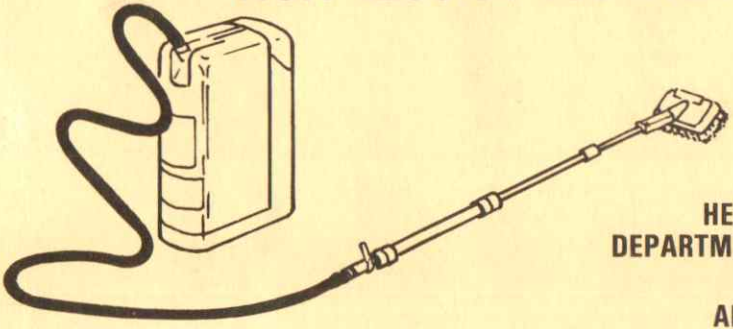
OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

FOR

DECONTAMINATING APPARATUS: PORTABLE, 14 LITER, M13

NSN 4230-01-133-4124



HEADQUARTERS
DEPARTMENT OF THE ARMY

APRIL 1984

WARNING

Use extreme caution AT ALL TIMES when handling DS2.

DS2 is a combustible solution. Severe chemical burns can result if personnel fail to observe ALL safety precautions. DS2 can damage eyes and skin, and if inhaled, can cause illness. DS2 can damage the NBC protective overgarment. Long term contact with DS2 (about 24 hours) can damage the NBC protective gloves, hood, and overboots.

To avoid injury:

- **Wear protective NBC clothing including mask, hood, and rubber gloves AT ALL TIMES when handling DS2 in a contaminated environment. If available, wear M2 Toxicological Agent Protective Apron. In extreme cold temperatures, wear rubber gloves INSIDE arctic mittens. Change mittens if they become soaked with DS2 since DS2 can damage the rubber gloves.**

- **DO NOT allow DS2 to spray on personnel.**

- **DO NOT allow DS2 to spray on NBC protective clothing.**

WARNING

To avoid injury:

- DO NOT spray DS2 on hot exhaust, hot surfaces, or open flames as it can cause fire.
- DO NOT use DS2 to decontaminate personnel. It is harmful to the skin and eyes.
- DO NOT inhale DS2 fumes, you may start coughing and become ill.
- DO NOT use the M13 DAP if the container is damaged or leaking.
- DO NOT use the DS2 filled, green-painted container for training.
- DS2 makes surfaces slippery; use caution to avoid falling.

WARNING

Keep fluid container on the same level as operator is standing as it can tip over and cause injury.

M13 DAP filled with DS2 weighs 54 lbs. To avoid injury use two people when lifting it 4 feet or higher.

(TEST)

For general first aid refer to FM 21-11. Specific first aid and medical information is on the next page.

FIRST AID

If DS2 comes in contact with:	Emergency Treatment to Follow
SKIN	remove it from the skin by wiping and then flush the affected area with water. DS2 may not give any immediate reaction; therefore, wash the area even if no discomfort is felt or no irritation is noted.
EYES	flush them with large amounts of water immediately. After flushing the eyes for 20 to 30 minutes, seek medical attention. DS2 can damage the eyes after a few seconds of exposure.
MOUTH	or is swallowed, rinse the mouth out immediately and SPIT OUT, then drink large amounts of water and seek medical attention immediately. DO not induce vomiting.
NOSE (fumes/vapor)	if you inhale enough to cause coughing, leave the area immediately. If breathing difficulties continue, seek medical attention.

TECHNICAL MANUAL

No. 3-4230-214-12&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 Apr 84

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR
DECONTAMINATING APPARATUS: PORTABLE,
14 LITER, M13
NSN 4230-01-133-4124

Current as of 17 February 1984 for Appendix F

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Armament, Muntions and Chemical Command, ATTN: DRSMC-MAS-C (A), Aberdeen Proving Ground, MD 21010. A reply will be furnished to you.

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HOW TO USE THIS MANUAL

You can use this book and an M13 DAP with accessories as the basis for training. Note the following:

Every part and assembly is illustrated and given a callout number on pages 2-0 through 2-3. The same callout number is used throughout the manual.

An empty black fluid container shall be used in training. Refer to page 2-33.

Any expendable supplies you will need are listed in Appendix E. Except for a funnel, these items should already be available to you.

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

SCOPE

This manual contains operator instructions and maintenance, organizational maintenance and Repair Parts and Special Tools List for the Decontaminating Apparatus: Portable, 14 Liter, M13 .... which will be referred to from now on as the M13 DAP. There is no Direct Support maintenance required, and therefore no other TM for the M13 DAP than this one.

PURPOSE OF EQUIPMENT

To spray decontaminating agent (DS2) onto surfaces of vehicles and equipment to reduce the level of chemical toxic agents.

MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750 as contained in Maintenance Management Update.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRS)

If your M13 DAP needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAY-MA (A), Aberdeen Proving Ground, MD 21010. We'll send you a reply.

NOMENCLATURE CROSS REFERENCE LIST

Common Name	Official Nomenclature
M13 DAP	Decontaminating Apparatus: Portable, 14 Liter, M13
Brush	Brush, Decontaminating
Accessory Container	Container, Decontaminating
Fluid Container	Container, Fluid, Filled
Hose	Hose Assembly, Nonmetallic
Pump	Pump, Manual
Steel Wool	Wool, Metallic
Training Container	Container, Fluid, Empty
"O" Ring	Packing, Preformed

Section II. EQUIPMENT DESCRIPTION

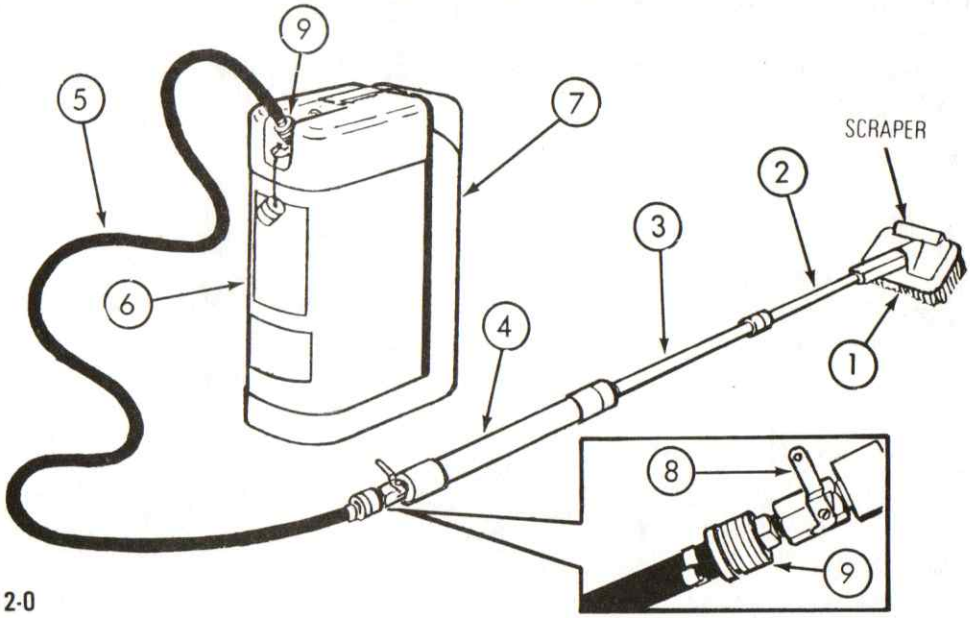
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Portable. Operated by one person. Filled with DS2, it is used to decontaminate vehicle surfaces that personnel will be most likely to come in contact with.

EQUIPMENT DATA

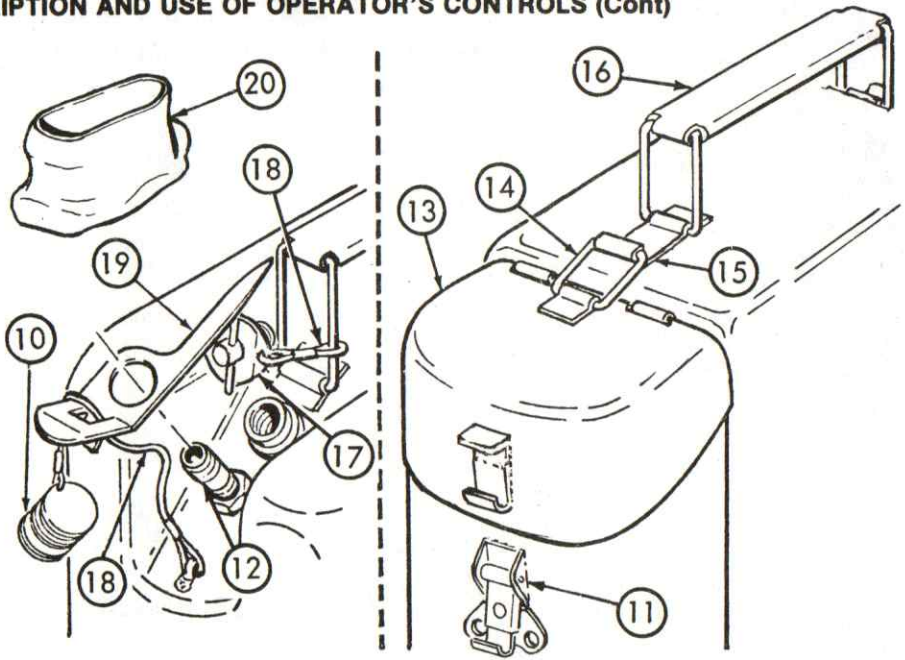
Weight	
Empty	24 lbs.
Filled with 14 liters of DS2 (3.7 gallons)	54 lbs.
Coverage	1200 sq ft at 75°F 111.5 sq meter at 24°C
Useable Temperature Range	
Low	-25°F
High	120°F
Dimensions (unpacked but not assembled)	
Length	14.00 in.
Width	6.63 in.
Height	18.75 in.
Storage Requirements cubic shipping area (uncrated)	1.5 cu. ft.

CHAPTER 2
OPERATING INSTRUCTIONS



Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS

1. Brush — Used for scrubbing on the DS2. The scraper on top of brush is used to remove mud or soil from equipment.
2. Wand, Brush Half — Provides attachment for brush and extends reach for scrubbing.
3. Wand, Pump Half — Another extension, for scrubbing.
4. Pump — Manually operated, delivers the DS2.
5. Hose — Feeds content of fluid container to pump.
6. Fluid Container — Holds the DS2. It's filled at the factory and is not refilled by the user.
7. Accessory Container — Stores all parts during transport and storage.
8. Pump Valve — Controls the flow of DS2 to the pump.
9. Quick-disconnect Couplers — Connects hose to pump and fluid container assembly.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10. Fluid Cap Assembly — Must be on when M13 DAP is not in use.

11. Link-lock — Secures accessory container cover.

12. Quick-connect Plug — Connects with hose quick-disconnect coupler.

13. Accessory Container Cover — Keeps parts secure.

14. Clip — Engages lock clip to lock together accessory container and fluid container.

15. Lock Clip — Engages clip to lock together accessory container and fluid container.

16. Lifting Handle — Enables you to carry the item with ease.

17. Vent Plug — Vents fluid container. Must be removed before removing fluid cap assembly.

18. Tether — Keeps fluid cap, vent plug, and piercing device from getting lost.

19. Piercing Device — Used to puncture the disk at the bottom of the quick-connect plug, which seals in the DS2.

20. Shrink Plastic Band — Secures piercing device, vent plug, and fluid cap assembly.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

The operator must perform scheduled services to be sure the M13 DAP will operate properly. Always keep in mind the WARNINGS and CAUTIONS before and during operation. If your equipment fails to operate, notify your supervisor.

Column B in the PMCS Table is before operation checks. Column M is for monthly checks. Column Q is for quarterly checks. When recording results of PMCS, entries in the PMCS Item No. column will be used for the TM Item No. column on DA Form 2404.

If the "Equipment Is Not Ready/Available If" column indicates deficiencies, notify your supervisor.

Perform quarterly (Q), monthly (M) as well as before (B) operations PMCS if:

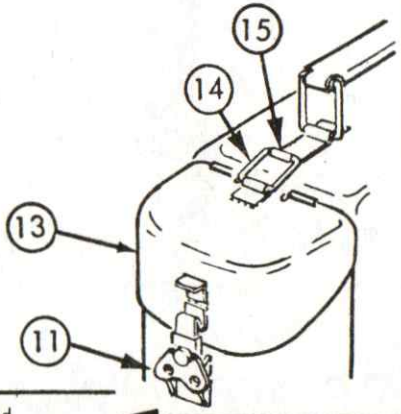
(1) You are the assigned operator and have not used the item since the last monthly check.

(2) You are operating the item for the first time.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLE

B = Before Operation **M = Monthly** **Q = Quarterly**

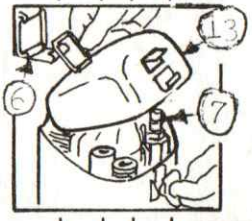
Item no.	Interval B	Interval M	Interval Q	Item to be Inspected Procedure	Equipment is Not Ready/Available If:
1			●	**ACCESSORY CONTAINER** Make sure cover (13) is securely latched (11) and that clip (14) engages lock clip (15) on fluid container.	Assemblies are not securely latched.



PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLE (Cont)

B = Before Operation **M = Monthly** **Q = Quarterly**

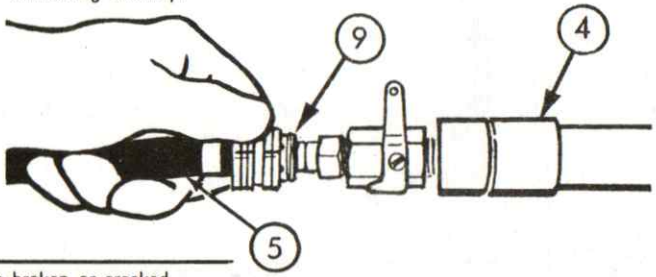
Item no.	Interval B	Interval M	Interval Q	Item to be Inspected Procedure	Equipment is Not Ready/Available If:
2			●	**M13 DAP** Open accessory container cover (13) and make sure no parts are missing. Check all painted surfaces for chipped or cracked paint, and for rust. Remove all rust with steel wool (item 6, app E), then apply primer coating (item 5) and spot paint (item 4).	
3	●	●		**FLUID CONTAINER** WARNING **Use extreme caution at all times when handling DS2. Observe WARNINGS on inside front cover.** Remove fluid container (6) from accessory container (7). Check that container is not dented, cracked, or is not leaking DS2.	Container is dented, cracked, leaking.



PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLE (Cont)

B = Before Operation M = Monthly Q = Quarterly

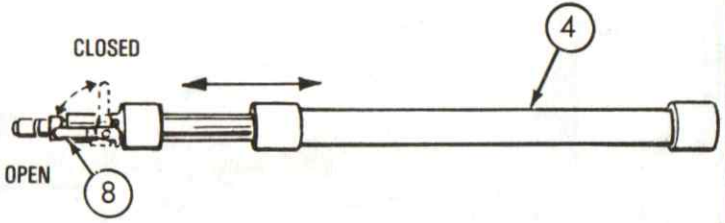
Item no.	Interval B	M	Q	Item to be Inspected Procedure	Equipment is Not Ready/Available If:
4	●		●	**HOSE** Check that "O" rings in the quick-disconnects are present, not cracked, sticky, or pitted. Make sure hose (5) is not broken or cracked. Attach each end of hose to pump (4) to make sure quick-disconnects (9) are connecting securely.	Hose is broken or cracked. Hose does not connect properly.



PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLE (Cont)

B = Before Operation **M = Monthly** **Q = Quarterly**

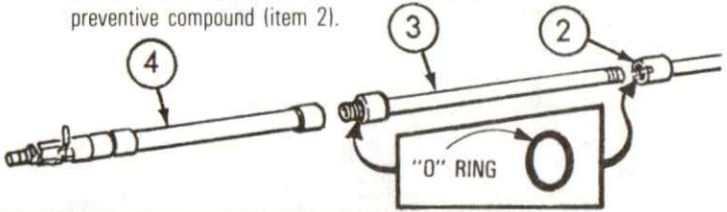
Item no.	Interval B	M	Q	Item to be Inspected Procedure	Equipment is Not Ready/Available If:
5	●		●	**PUMP** Check that pump valve (8) opens and closes. Make sure pump (4) extends and closes fully. Check pump pressure by disconnecting hose and placing a finger over holes when pumping, pump valve should be open.	Pump doesn't work. Valve won't open and/or close.



PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLE (Cont)

B = Before Operation **M = Monthly** **Q = Quarterly**

Item no.	Interval B	M	Q	Item to be Inspected Procedure	Equipment is Not Ready/Available If:
6	●		●	**WANDS** Make sure that "O" rings on large end of wand, pump half (3) and inside wand, brush half (2) are present and are not cracked or pitted. Check threads on both wands (2 and 3) by screwing wand, pump half into pump (4) and into each other. If threads bind, spray with corrosive preventive compound (item 2, app E). If threads have rust on them, remove rust with steel wool (item 6) and spray with corrosion preventive compound (item 2).	Wands won't screw together. "O" ring is missing or unserviceable.



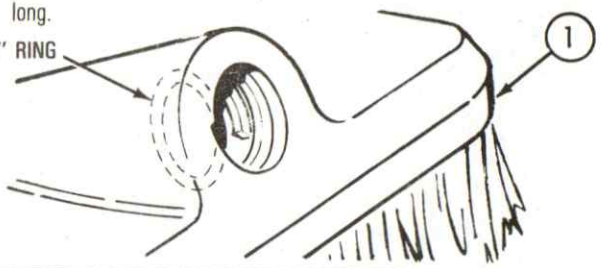
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLE (Cont)

B = Before Operation **M = Monthly** **Q = Quarterly**

Item no.	Interval B	M	Q	Item to be Inspected Procedure	Equipment is Not Ready/Available If:
7	●		●	**BRUSH**	

NOTE:
Replace all items in container as shown on page 2-29.

Check that brush (1) is not warped or cracked. Make sure the threads, molded into the brush are not stripped. Check that "O" ring in brush is present and not cracked or pitted. Brush bristles must be no less than 1" long.



Brush is warped, cracked, or threads are stripped. Bristles are less than 1" long.

Section III. OPERATION UNDER USUAL CONDITIONS

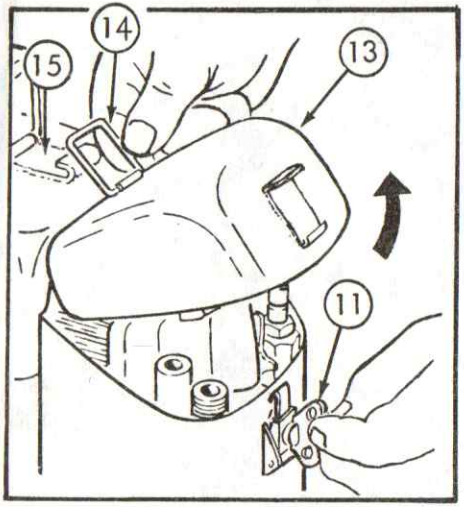
WARNING

Use extreme caution AT ALL TIMES when handling DS2. Observe warnings on inside front pages. Don protective clothing.

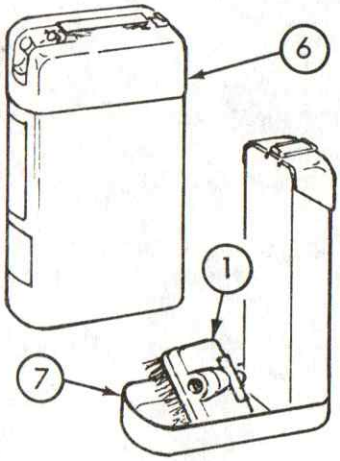
ASSEMBLY AND PREPARATION FOR USE

NOTE: The fluid container can be used either (A) standing and attached to accessory container, (B) standing alone, or (C) removed from accessory container and lying horizontally.

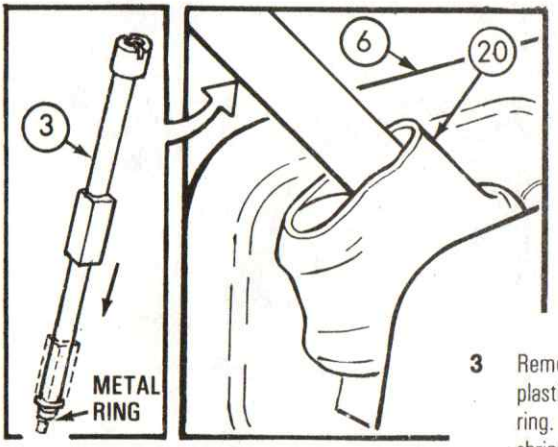
The fluid container is easier to carry in position (B). That is how it will be shown in the following operation procedures.



1 Turn link-lock (11), raise cover (13) and unhook clip (14) from lock clip (15).



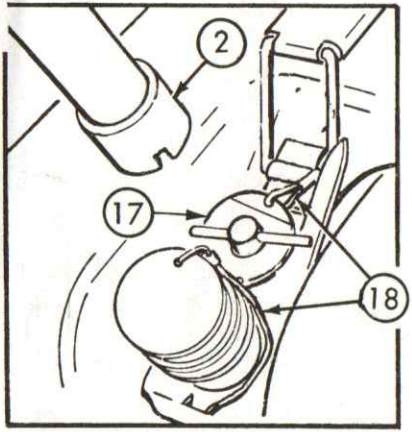
2 Remove fluid container (6) from accessory container (7). Remove the brush (1) and lay it on the accessory container.

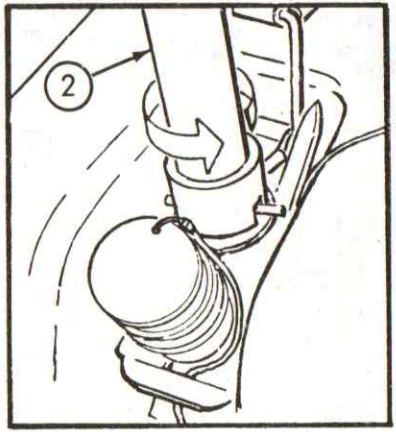


3 Remove only wand, brush half (3) and slide the plastic adapter on the wand away from the metal ring. Use the small end of the wand to pry off the shrink plastic band (20) on the fluid container (6). Discard the shrink plastic band.

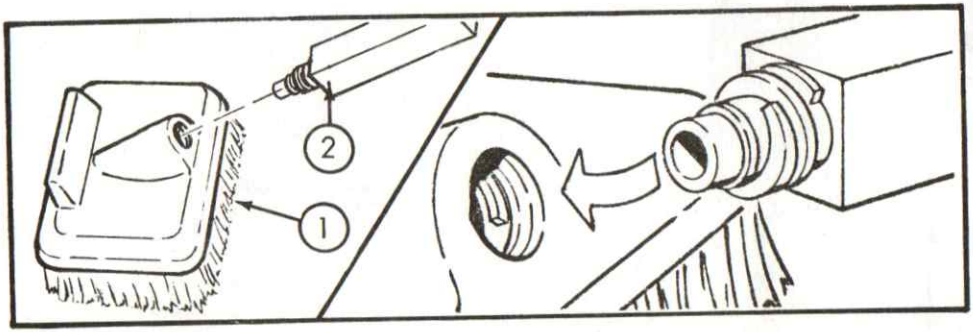
ASSEMBLY AND PREPARATION FOR USE (Cont)

CAUTION: When removing vent plug, fluid cap assembly, and piercing device, be careful not to break tethers (18). The tethers will keep these items from getting lost during operation.

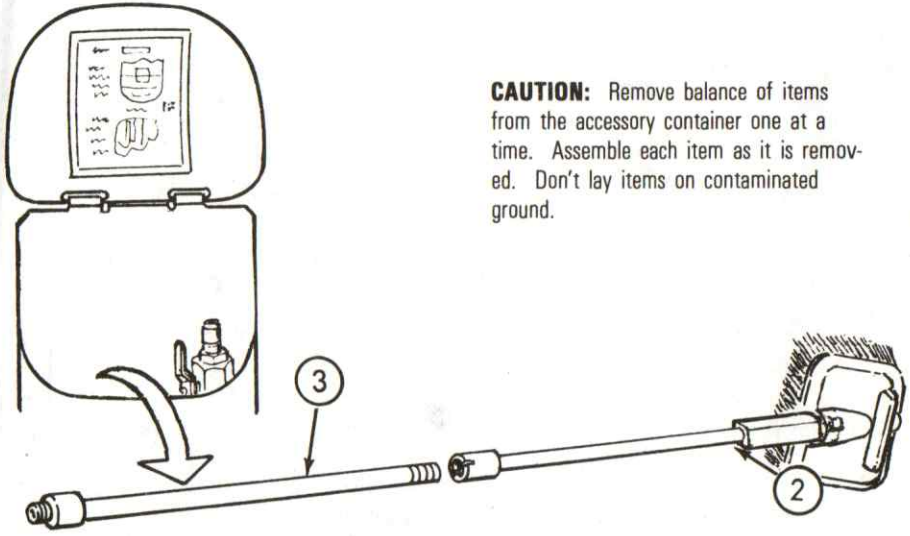




4 Use notched end of wand, brush half (2) to unscrew and remove vent plug (17).

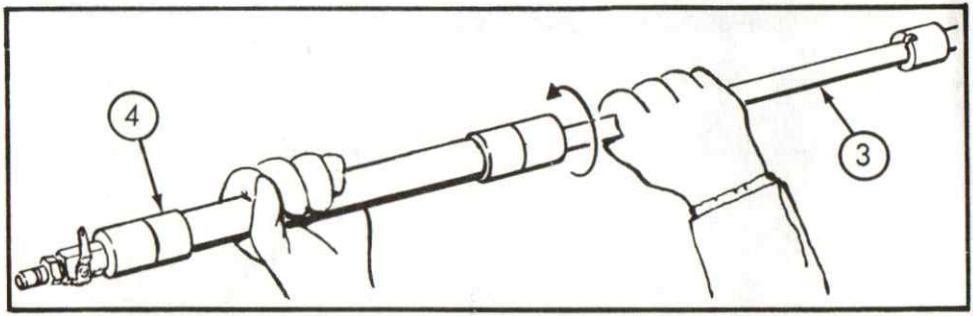


5 Pick up the brush (1), screw the plastic adapter on wand, brush half (2) into brush securing tightly.

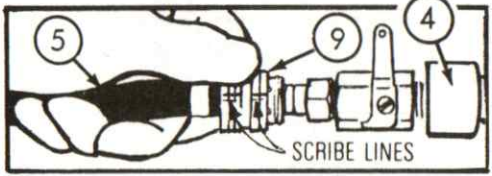


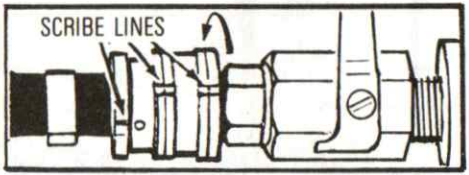
CAUTION: Remove balance of items from the accessory container one at a time. Assemble each item as it is removed. Don't lay items on contaminated ground.

6 Remove the wand, pump half (3) and screw the two wands together.



7 Remove the pump (4) and screw it onto wand, pump half (3).

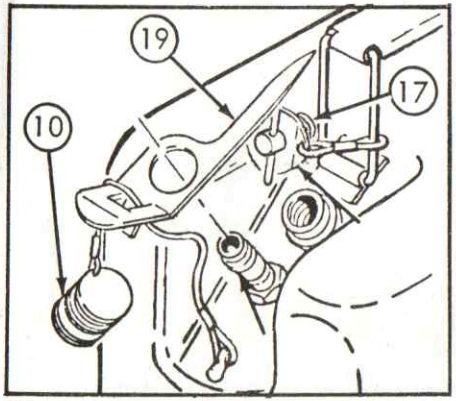




8 Remove hose (5). Line up the scribe lines on the hose coupling (9) to allow it to slip over the coupling plug. Connect hose (5) to pump (4). To lock in place, turn the locking ring so the scribe lines are not lined up.

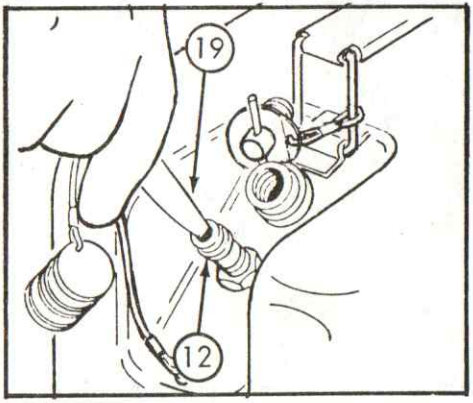
ASSEMBLY AND PREPARATION FOR USE (Cont)

WARNING: Vent plug (17) MUST be removed before removing fluid cap assembly (10). Otherwise, DS2 may spray out when the piercing device (19) is inserted.

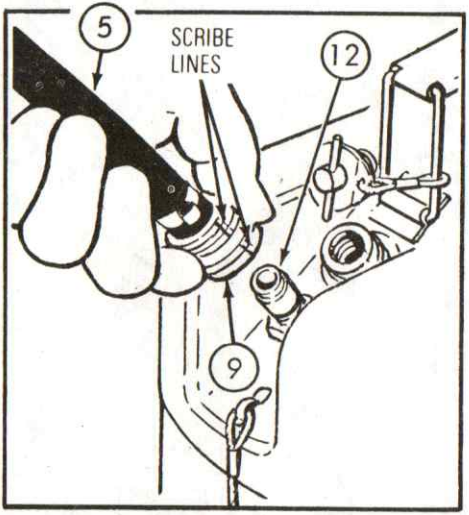


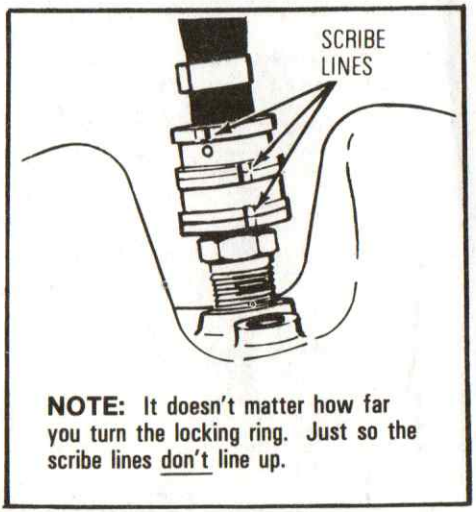
9 Pull up the fluid cap assembly (10).

10 Remove piercing device (19).



11 Insert and rotate the piercing device (19) to rupture the disk at bottom of the quick-connect plug (12). Remove piercing device from plug.





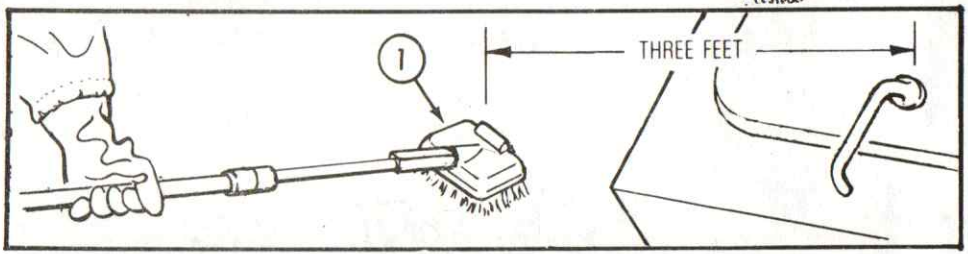
12 Line up scribe lines on hose coupling (9). Connect hose (5) to quick-connect plug (12). To lock in place, turn the locking ring so the scribe lines are not lined up. Make sure locking ring is fully seated.

OPERATION

WARNING

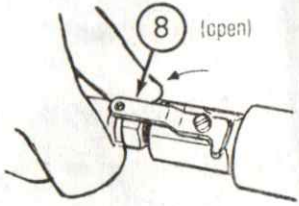
1. Keep fluid container (6) on same level as operator is standing as fluid container can tip over easily.
2. DO NOT spray DS2 on hot exhaust, hot surfaces or open flame.
3. DS2 coated surfaces are slippery; use caution to avoid falling.

NOTE: Remove deposits of mud, soil, etc. with scraper part of brush (1).



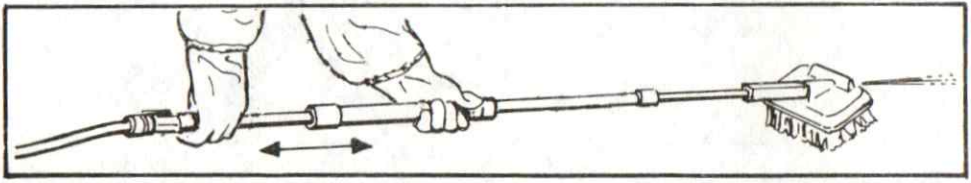
1 Position brush (1) about three feet from contaminated area.

2 Open pump valve (8) by turning it to in-line position.



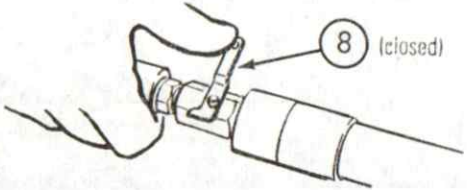
WARNING

DO NOT allow DS2 to spray on personnel or protective clothing. DS2 can penetrate clothing and can be harmful to the skin and eyes.



3 Pump until DS2 flows from hole in brush.

4 Then pump one stroke, sweeping an arc of four to five feet while spraying DS2 and close pump valve (8).



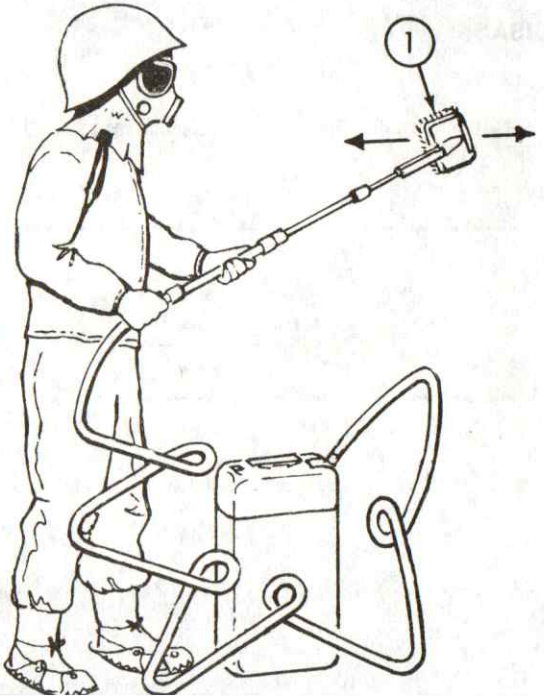
OPERATION (Cont)

NOTE: You will only decontaminate those surfaces most likely to be touched by the crew ... doors, hatches, etc.

5 Use brush (1) to scrub DS2 over contaminated surfaces.

6 Keep repeating steps one through five until surface being decontaminated is wet.

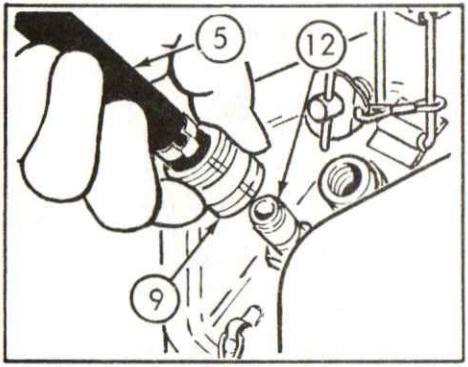
7 Whenever possible, those items that have been sprayed or scrubbed with DS2 should be rinsed with water.

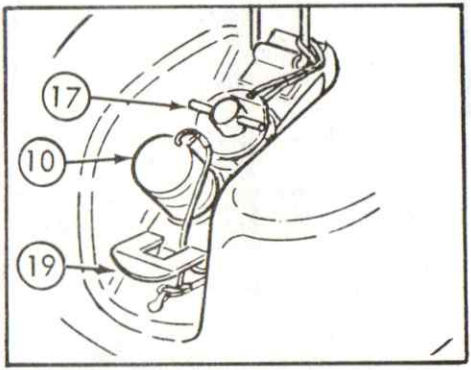


DISASSEMBLY AFTER USE

WARNING

Use care when removing hose (5) so that DS2 does not spray over you. Drain hose carefully away from you as DS2 can penetrate your clothing.



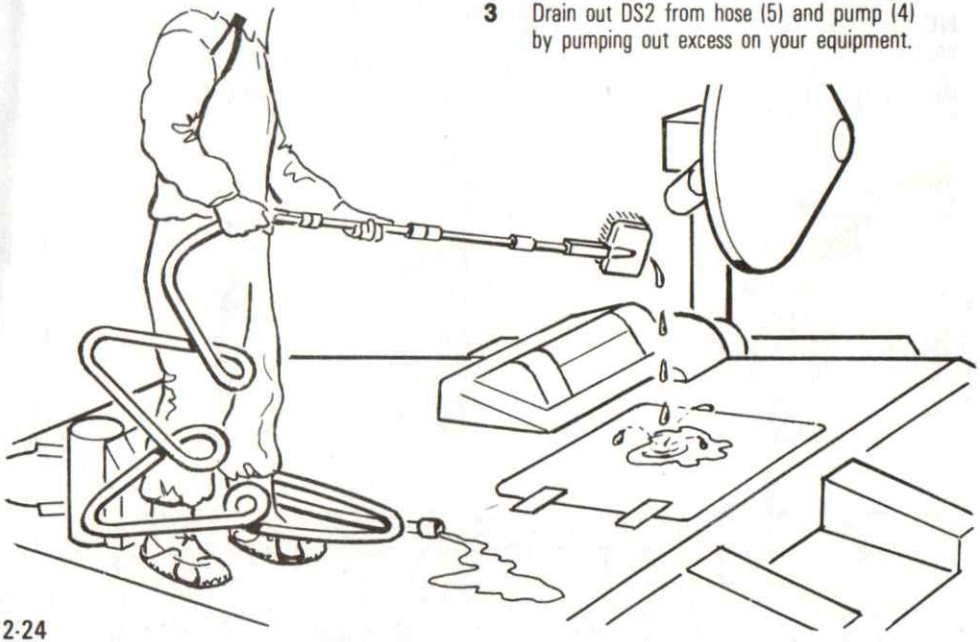


1 Line up scribe on quick-disconnect coupler (9) and remove hose (5) from quick-connect plug (12).

2 Replace piercing device (19), fluid cap assembly (10), and vent plug (17).

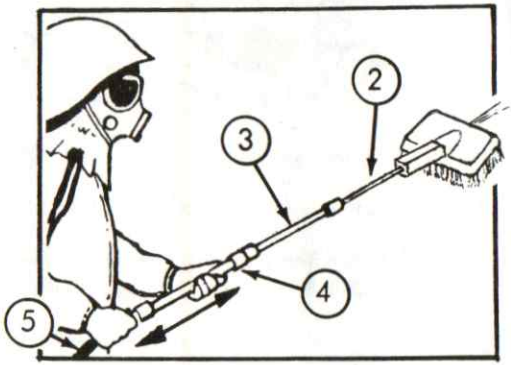
DISASSEMBLY AFTER USE (Cont)

3 Drain out DS2 from hose (5) and pump (4) by pumping out excess on your equipment.



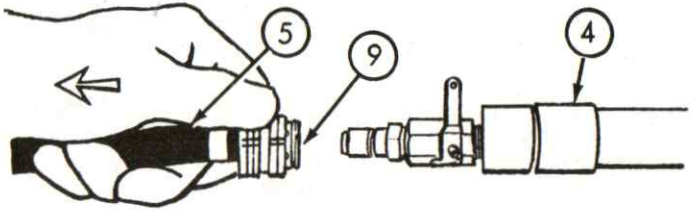
NOTE: If you don't have any antifreeze, use water in step 4.

4 Put free end of hose (5) in a container of antifreeze (item 1, app E) or water and pump through the hose (5), pump (4), and wands (2) and (3) and brush (1) to flush out DS2. Remove free end of hose from antifreeze container and work pump to remove solution from the system.



NOTE: Be sure to pump out on the ground away from where you are standing.

DISASSEMBLY AFTER USE (Cont)

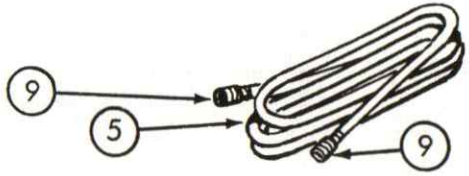


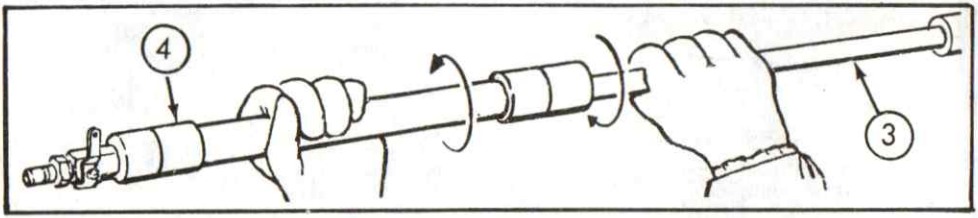
5 Line up scribe lines on quick-disconnect coupler (9) and remove hose (5) from pump (4).

6 Hold up hose to drain out antifreeze or water completely.

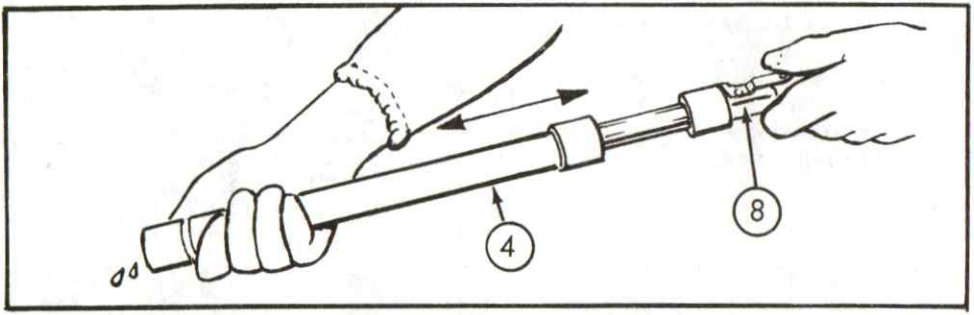
> **NOTE: When replacing items in container, locate them to match the stowage label on the inside of the cover.**

7 Fold together hose (5) and replace it in accessory container with the quick-disconnects (9) down.





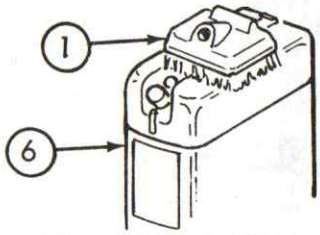
8 Unscrew pump (4) from wand, pump half (3).



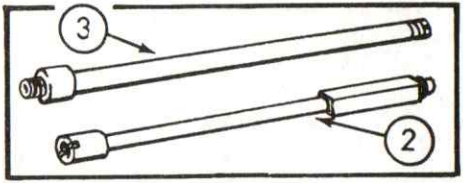
9 Operate pump (4) a few strokes with pump valve (8) open (in-line position to remove any remaining antifreeze (or DS2) or water. Stow pump (4) in accessory container.

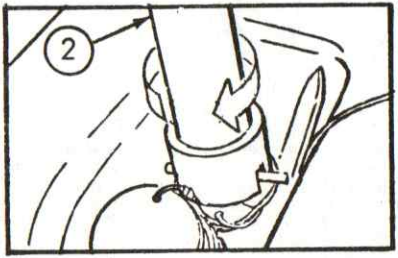
DISASSEMBLY AFTER USE (Cont)

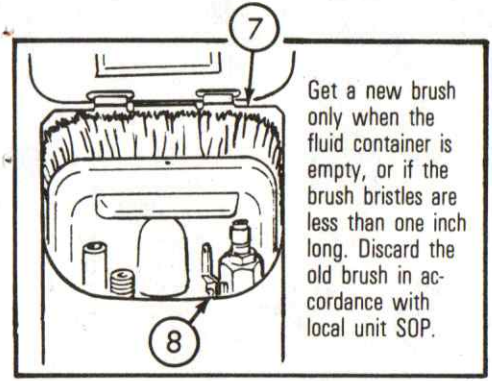
10 Do not touch the brush bristles. Remove brush (1) from wand (2) and lay it across fluid container (6).



11 Unscrew the two wands (2) and (3) and hold them upright to drain out antifreeze, DS2 or water. Store wand, pump half (3) in accessory container (7). Use notched end of wand, brush half (2) to tighten vent plug. Store wand brush half (2) in the accessory container (7).



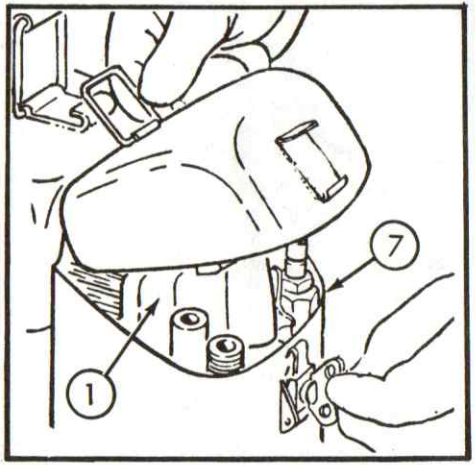




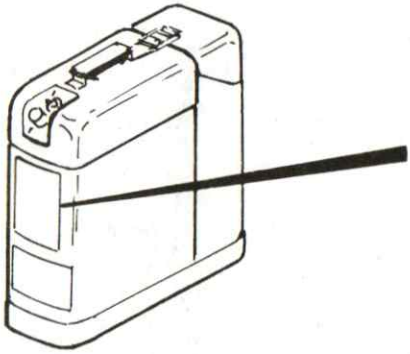
Get a new brush only when the fluid container is empty, or if the brush bristles are less than one inch long. Discard the old brush in accordance with local unit SOP.

NOTE: Be sure pump valve (8) is up for storage.

12 Dispose fluid container (6), when empty. Get a new fluid container and hook it into the accessory container (7). Stow new brush (1). Close top of accessory container (7) and latch.



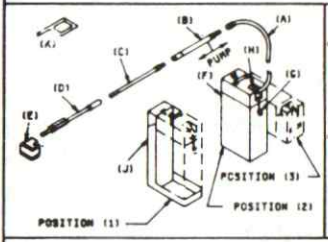
DECALS AND INSTRUCTION PLATES



DECONTAMINATING APPARATUS: PORTABLE,14 LITER,M13

INSTRUCTIONS

- PLACE FLUID CONTAINER (F) IN ONE OF THREE POSITIONS SHOWN.
- USE WAND (D),FROM ACCESSORY CONTAINER (J), TO REMOVE DRINK PLASTIC BAND AND VENT PLUG (H).
- REMOVE AND ASSEMBLE ITEMS FROM ACCESSORY CONTAINER (J), IN THE FOLLOWING ORDER: WAND (C) TO WAND (D),WAND (D) TO BRUSH (E), WAND (C) TO PUMP (B), PUMP (B) TO HOSE (A).
- REMOVE FLUID CAP (G), INSERT PIERCING DEVICE (K) COMPLETELY INTO QUICK CONNECT PLUG AND ROTATE PIERCING DEVICE (K).
- ATTACH LOOSE END OF HOSE (A) TO QUICK CONNECT PLUG.

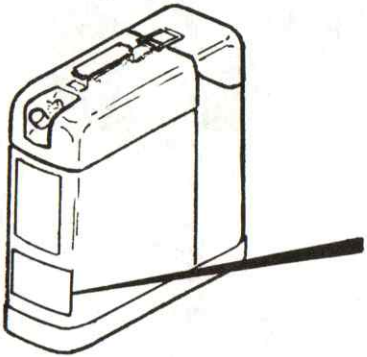


WARNING

- PROTECTIVE CLOTHING, GLOVES & CHEMICAL/BIOLOGICAL MASK MUST BE WORN WHEN USING DS2.
- DISCONNECT ITEMS WITH CAUTION: HOSE,PUMP,WANDS & FLUID CONTAINER MAY CONTAIN DS2.

TO OPERATE

- POSITION BRUSH 3 FEET FROM CONTAMINATED AREA.
- OPEN PUMP VALVE (VALVE HANDLE IN LINE WITH PUMP).
- PUMP UNTIL FLUID FLOWS, CONTINUE TO PUMP ONE STROKE AT A TIME,SWEEPING AN ARC OF 7 TO 8 FEET PER STROKE.
- CLOSE VALVE AND SCRUB AREA COVERED WITH DS2. REPEAT ABOVE.
- WHEN FINISHED,DISCONNECT HOSE FROM FLUID CONTAINER, DRAIN HOSE,PUMP AND WAND ASSEMBLIES.
- PUMP ANTIFREEZE THROUGH HOSE,PUMP AND WAND ASSEMBLIES DISASSEMBLE: STOW ITEMS.
- REPLACE VENT PLUG AND FLUID CAP ON CONTAINER.



HAZARDS

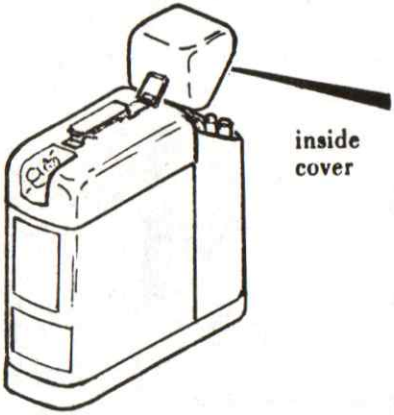
CORROSIVE EYE AND SKIN
COMBUSTIBLE LIQUID

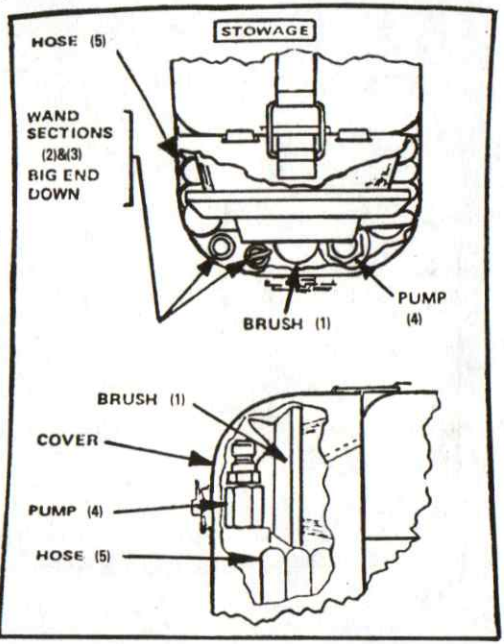
DANGER! CAUSES (SEVERE) BURNS

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID BREATHING VAPOR OR MIST.
WASH THOROUGHLY AFTER HANDLING LIQUID.
USE WITH ADEQUATE VENTILATION AND WITH FACE SHIELD, RUBBER GLOVES AND APRON, AND RESPIRATOR.
IN CASE OF FIRE, USE CO_2 OR ALCOHOL FOAM.
KEEP AWAY FROM EXCESSIVE HEAT, OPEN FLAME OR OXIDANTS.
IN CASE OF SPILL, ABSORB WITH VERMICULITE AND NEUTRALIZE WITH SODIUM BISULFATE.

FIRST AID: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING OR SHOES; AND WASH CLOTHING BEFORE REUSE. BUT DISCARD SHOES. IF SWALLOWED, DRINK MUCH WATER OR MILK; BUT DO NOT VOMIT. SEEK MEDICAL AID IN EVENT OF ANY PERSONAL CONTACT WITH DS2.

DECALS AND INSTRUCTION PLATES (Cont)





USE OF TRAINING CONTAINER

WARNING

DO NOT use a DS2 filled, green painted, fluid container for training.

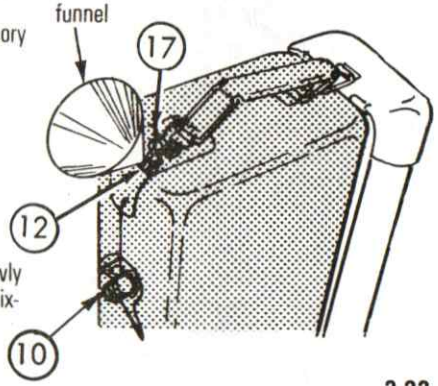
DS2 should not be used during training. A clean, empty fluid container assembly, painted black, shall be used for training (see page D-1). The container can be filled with either water or a mixture of water and antifreeze (item 1, app E). Proceed as follows:

1 Hook the black-painted training container into the accessory container in place of the green-painted fluid container.

2 You will need to obtain a funnel, common laboratory, **(item 3, app E).**

3 Remove the vent plug (17) and the fluid cap assembly (10).

4 Insert the funnel in the quick-connect plug (12) and slowly pour 14 liters (3.78 gal) of water or water-antifreeze mixture thru the funnel into the training container.



USE OF TRAINING CONTAINER (Cont)

5 Remove the funnel and replace the vent plug (17) and fluid cap assembly (10).

You can use the procedures in this TM as the basis of your training. However, the black container, since it will be used over and over, won't have a shrink plastic band around the vent plug (17) and fluid cap assembly (10) and won't have a disk at the bottom of the quick-connect plug (12).

You will have to simulate removing the shrink plastic band (step 3 on page 2-13).

You will have to simulate rupturing the sealing disk (step 11 on page 2-18).

You will save and re-use the brush.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

OPERATION IN UNUSUAL WEATHER

WARNING

In extreme cold, wear NBC protective rubber gloves inside arctic mittens. Change mittens if they become soaked with DS2 since DS2 can damage rubber gloves.

CAUTION

Do not expose the unit to salt spray. It can cause corrosion.

The M13 DAP is designed to perform in a temperature range of −25°F to 120°F (−31.6°C to 49°C). It will not be affected by humidity or rain.

DECONTAMINATION OF THE M13 DAP

An M13 DAP which has been stored on the outside of a contaminated vehicle will require decontamination itself before you go on to decontaminate the vehicle. Proceed as follows:

1. Do not remove the M13 DAP from its mounting bracket.

2. Open the accessory container, remove and assemble the accessories (follow the procedures on pages 2-12 through 2-17. In step 2 (page 2-12), do not remove the fluid container.

3. Spray DS2 on the exterior of the container and scrub thoroughly.

4. Scrub any contaminated areas of your rubber gloves with the DS2 soaked brush. If possible rinse gloves off with water.

5. Continue with decontamination of the vehicle as required.

NOTE

The following manuals contain more information on decontamination:

- FM 3-87-HTF — Nuclear, Biological, and Chemical (NBC) Reconnaissance and Decontamination Operations.

FM 21-40-NBC (Nuclear, Biological and Chemical) Defense

- TM 3-220, Chemical, Biological, and Radiological (CBR) Decontamination.

CHAPTER 3
OPERATOR MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

The M13 DAP doesn't have any scheduled lubrication.

Section II. TROUBLESHOOTING PROCEDURES

The troubleshooting table lists the common malfunctions which you may find during operation of the M13 DAP. You should perform the tests/inspections in the order listed.

This manual cannot list all malfunctions that may occur, nor all tests or inspections or corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

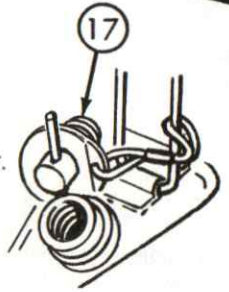
1. APPARATUS WON'T PUMP DS2

Step 1. Check that valve (8) is open.

Open valve. If it won't open full, notify your supervisor.

Step 2. Check that vent plug (17) was removed.

Remove vent plug.



Step 3. Check tightness of both hose connections.

If connectors won't fit properly, notify your supervisor.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. APPARATUS WON'T PUMP DS2 (cont)

Step 4. Check hose assembly for leaks, cuts, and breaks.

If hose is leaking, notify your supervisor.

Step 5. Check for blockage in hose or wands ... don't forget to check DS2 discharge hole.

Remove blockage. If unable to, replace blocked assembly. If discharge hole is plugged, discard the brush and notify your supervisor.

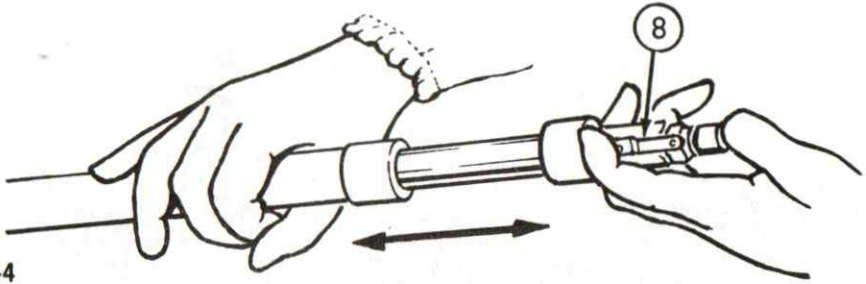
DS2 discharge hole.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. APPARATUS WON'T PUMP DS2 (cont)

Step 6. Check for suction by disconnecting the hose ... placing a finger over the hole and operating the pump. Pump valve (8) should be open.

If there is no suction, notify your supervisor.

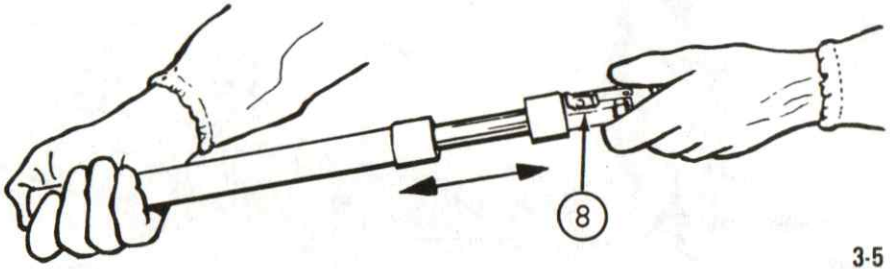


MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. APPARATUS WON'T PUMP DS2 (cont)

Step 7. Check pump pressure by disconnecting wand and placing a finger over hole while pumping. Pump valve (8) should be open.

If there is no pressure in the pump, notify your supervisor.

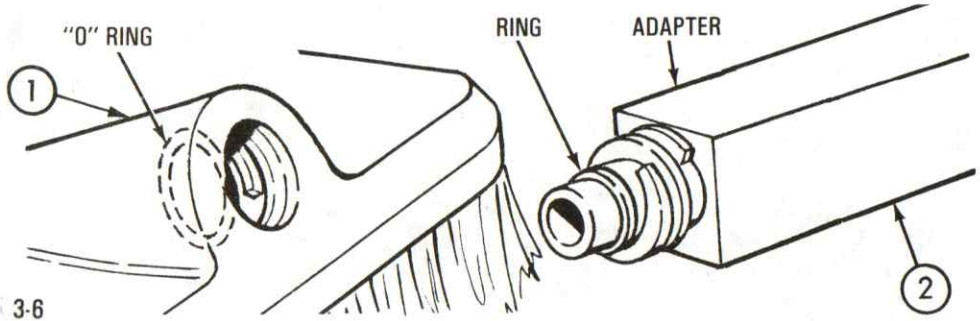


MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

2. BRUSH LEAKS OR DOES NOT STAY ON WAND

Check brush threaded socket and "O" ring for damage and consequent leakage; check wand end for missing retaining ring and adapter for damaged threads.

If brush (1) or wand, brush half (2), is at fault, notify your supervisor.



MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

3. DS2 LEAKS FROM WANDS

Check threaded joints on both wands for dirt or rust. Check threads for cross threading. Check for missing or damaged "O" rings.

Clean-up joints. If either wand half is damaged, notify your supervisor.

4. HOSE COUPLING WON'T ENGAGE

Check coupling for obstructions on locking ring. Check inside of coupling for dirt obstructing opening. Check that scribe lines are lined up and that locking ring is fully seated.

Clean up coupling. If coupling is damaged and hose is unusable, notify your supervisor.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE

Section I. SERVICE UPON RECEIPT

The following steps will be taken to inspect the M13 DAP prior to storage and before issue to the user.

LOCATION	ITEM	ACTION	REMARKS
Shipping Container	M13 DAP	Unpack	
		a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Packaging Improvement Report.	

LOCATION	ITEM	ACTION	REMARKS
		b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.	The equipment has 7 components: fluid container accessory container brush wand, brush half wand, pump half pump hose
		c. Check to see whether the equipment has been modified.	Refer to DA PAM 310-1.
		d. Perform Operator PMCS. See Chapter 2, Section II.	If there is any leakage of DS2 from dents or cracks, dispose of fluid container in accordance with DEMIL instructions in TM 43-0003-28.

Section II. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Organizational Preventive Maintenance Checks and Services Monthly Schedule

Item No.	Item to be Inspected	Procedures
1	Fluid Container	Check that container is not dented, cracked, or is not leaking DS2.

Section III. ORGANIZATIONAL MAINTENANCE

NOTE: There is no troubleshooting.

Organizational personnel are authorized to replace the end item or to repair it by replacing the defective components as listed in Appendix F.

The repair of the end item, by replacement of the component part, may be performed, when authorized by local SOP, with the assistance of the crew/operator.

Section IV. PREPARATION FOR STORAGE OR SHIPMENT

Security of the M13 DAP will be maintained in accordance with AR 190-13.

The apparatus will meet long-term storage requirement of five years.

Under tropic conditions, the M13 must be stored indoors. Exposure to salt spray can cause corrosion.

Administrative storage will be in accordance with TM 740-90-1, Administrative Storage of Equipment.

APPENDIX A

REFERENCES

FORMS

Equipment Inspection and Maintenance Worksheet	DA Form 2404
Quality Deficiency Report	SF 368
Recommended Changes to DA Publications and Blank Forms	DA Form 2028
Report of Discrepancy	SF 364

FIELD MANUALS

First Aid For Soldiers	FM 21-11 (TEST)
NBC (Nuclear, Biological, and Chemical) Defense	FM 21-40
Nuclear, Biological and Chemical (NBC) Reconnaissance and Decontamination Operations	FM 3-87 (HTF)

TECHNICAL MANUALS

Administrative Storage of Equipment	TM 740-90-1
Chemical, Biological, and Radiological (CBR) Decontamination	TM 3-220
Demilitarization Procedures For FSC 4230 Decontaminating and Impregnating Equipment, FSC 4410 Industrial Boilers, FSC 6810 Chemicals, FSC 6850 Miscellaneous Chemical Specialties	**TM 43-0003-28**

MISCELLANEOUS PUBLICATIONS

Consolidated Index of Army Publications and Blank Forms	DA PAM 310-1
Maintenance Management Update	DA PAM 738-750
The Army Physical Security Program	AR 190-13

APPENDIX B
MAINTENANCE ALLOCATION CHART

GENERAL

The maintenance allocation chart indicates specific maintenance operations performed at the proper maintenance levels.

GROUP NUMBER (COLUMN 1)

The group number matches the functional group code which appears at the top of the Repair Parts and Special Tools List listing.

MAINTENANCE LEVEL CODE (COLUMN 4)

Code	*Explanation*	*Code*	*Explanation*
C	Operator/Crew Maintenance	H	General Support Maintenance
O	Organizational Maintenance	D	Depot Maintenance
F	Direct Support Maintenance		

REMAINING COLUMNS (COLUMNS 2, 3, 5, AND 6)

Columns 2, 3, 5, and 6 are self-explanatory.

MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL C	O	F	H	D	(5) TOOLS AND EQPT	(6) REMARKS
00	M13 Portable Decontaminating Apparatus	Inspect	0.2	0.2					
		Service	0.2	0.2					
		Replace		0.2					
		Repair		0.2					

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Not Applicable

APPENDIX D
ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

D-1 SCOPE

This appendix lists additional items you are authorized for the support of the M13 DAP.

D-2 GENERAL

This list identifies items that do not have to accompany the M13 DAP and that do not have to be turned in with it. These items are all authorized to you by CTA, MTDE, TDA, or JTA.

D-3 EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM & PART NUMBER USABLE ON CODE	(3) U/M	(4) AUTH
	CTA AUTHORIZED ITEMS		
4230-01-136-8889	Fluid Container Assembly*	EA	1

*Empty, painted black, for training purposes only.

APPENDIX E
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

SCOPE

This appendix lists expendable supplies and materials you will need to operate and maintain the M13 DAP. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

EXPLANATION OF COLUMNS

Column 1. Self-explanatory.
Column 2. Lowest level of maintenance that requires the listed item. C = Crew.
Column 3. Use the NSN for requisitioning.
Column 4. Description. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) followed by the part number.
Column 5. U/M is Unit of Measure:

ea = each
gl = gallon
oz = ounce

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	C	6685-00-181-7929	Antifreeze: Bottle, 1 Gal (81349) MIL-A-46153	gl
2	C	8030-00-838-7789	Corrosion Preventive Compound: Aerosol Can, 16 Oz. (83149) MIL-C-23411	oz
3	C	6640-00-889-7023	Funnel, Common Laboratory: Plastic Polypropylene Box (81348) NNNF001652	ea
4	C	8010-01-128-6958	Polyurethane Coating:Forest Green (81349) MIL-C-46168	gl

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
5	C	8010-00-082-1714	Primer Coating: 1 Gal Adhesive; 1 Qt Catalyst Kit (81349) MIL-P-52192	ea
6	C	5350-00-242-4403	Wool, Metallic: Steel Wool, Roll, FF-S-740 Type 1, Class 00 (81348) FF-W-1825	ea

APPENDIX F

REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

GENERAL

This appendix lists repair parts required for performance of organizational maintenance of the M13 DAP. It authorizes the requisitioning and issue of repair parts as indicated by the source and maintenance codes. There are no special tools for this item.

SOURCE, MAINTENANCE, AND RECOVERABILITY (SMR) CODES (COLUMN 2)

Source Code	*Maintenance Code*		*Recoverability Code*
X X	X	X	X
How you get the item.	Who can replace (order) the item.	Who can repair the item	Who disposes of an unserviceable item.

SOURCE, MAINTENANCE, AND RECOVERABILITY (SMR) CODES (COLUMN 2) (Cont)

Source Codes:

PA Stocked item. You can order it.

Maintenance Codes:

Position 3: O Organizational Maintenance can replace the item.
Position 4: Z No repair is authorized.

Recoverability Code:

A Item needs special handling of hazardous material. Refer to FM 3-87 and FM 21-40.

Z Nonreparable item; disposed of by maintenance level indicated in position 3.

NATIONAL STOCK NUMBER (COLUMN 3)

Use the NSN for requisitioning.

FEDERAL SUPPLY CODE FOR MANUFACTURER (FSCM) (COLUMN 4)

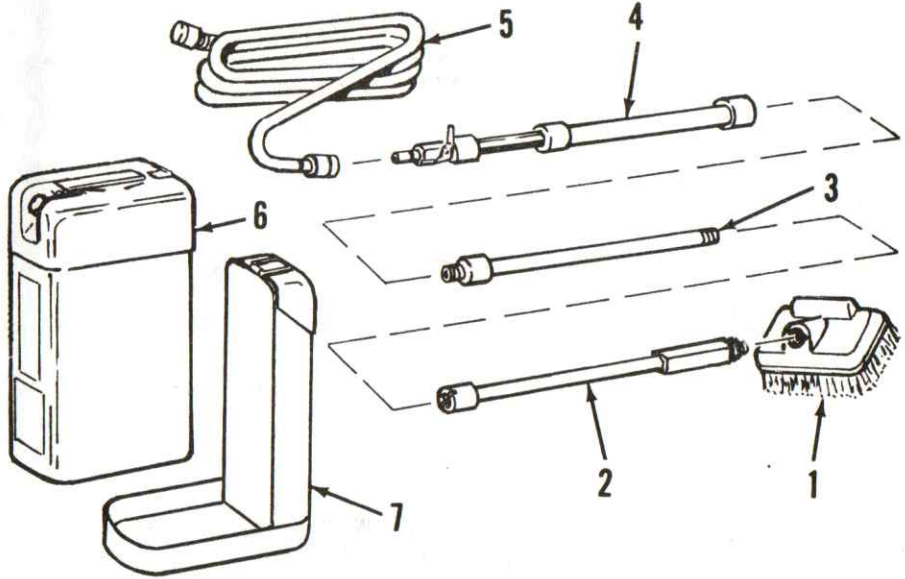
Identifies the manufacturer or whoever it is that supplies the item.

ILLUSTRATION ITEM NUMBER (COLUMN 1), DESCRIPTION AND PART NUMBER (COLUMN 5), AND QUANTITY INCORPORATED IN UNIT (COLUMN 6)

These columns are self-explanatory. The unit of issue for every item in this TM is "each."

There is no Usable on Code for this TM.

Section II. REPAIR PARTS LIST



(1) ILLUS ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) DESCRIPTION AND PART NUMBER USABLE ON CODE	(6) QTY INC IN UNIT
	GROUP 00 M13 PORTABLE DECONTAMINATING APPARATUS				
1	PAOZZ	4230-01-136-8892	81361	BRUSH, DECONTAMINATING D5-51-561	1
2	PAOZZ	4230-01-136-8893	81361	WAND, BRUSH HALF C5-51-537	1
3	PAOZZ	4230-01-136-8890	81361	WAND, PUMP HALF C5-51-555	1
4	PAOZZ	4230-01-136-8894	81361	PUMP, MANUAL D5-51-540	1
5	PAOZZ	4720-01-136-9028	81361	HOSE ASSEMBLY, NON-METALLIC D5-51-560	1
6	PAOZA	4230-01-136-8888	81361	CONTAINER, FLUID, FILLED D5-51-575	1
7	PAOZZ	4230-01-136-8891	81361	CONTAINER, DECONTAMINATING E5-51-529	1

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By Order of the Secretary of the Army:

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The Adjutant General

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